CLAIMS:

1. A bearing structure, comprising:

fixed components; and

rotatable components which are supported by the fixed components for rotation,

wherein the fixed components and the rotatable components are kept out of contact with each other during rotations of the rotatable components, and

the bearing structure further comprising a conductive structure for electrically connecting the fixed components and the rotatable components is provided on or in the vicinity of an axis of the rotational center of the bearing structure.

2. A bearing structure according to Claim 1,

wherein the conductive structure comprises magnetic fluid.

3. A bearing structure according to Claim 1,

wherein the conductive structure is an elastic component which is fixed to one of either the fixed components or the rotatable components and in contact with the other thereof.

4. A bearing structure according to Claim 3,

wherein the elastic component is a curved flexible conductive strip.

5. A bearing structure according to Claim 3, wherein the elastic component is a flexible conductive ring.

6. A bearing structure according to Claim 1, wherein the conductive structure comprises a conductive headed pin, which is fitted into a blind hole provided on the one of either the fixed components or the rotatable components in a movable manner in an axial direction, and pushed by a elastic body so that a spherical head thereof serving as a contact point is kept in contact with the other thereof.

7. An air bearing having the conductive structure according to Claim 6, wherein the elastic body is a coil spring made of conductive materials.

8. A bearing structure according to Claim 1, wherein the conductive structure comprises a bundle of conductive fibers, one end of which is bundled and fixed to the rotatable components, and the other end of

which is a free end which is inserted into a hole provided on the fixed components.

9. A bearing structure according to Claim 1, wherein the conductive structure comprises:

a spindle which is fitted into and guided by a sleeve fixed to one of either the fixed components or the rotatable components in a manner capable of relative rotation, which spindle has a groove or grooves on an outer peripheral surface thereof for generating hydrodynamic pressure to generate thrust force for pushing a spherical contact point at one end of the spindle into the sleeve by the effect of the relative rotation; and

a strand composed of conductive fibers, one end of which is fixed to the other of either the fixed components or the rotatable components and the other end of which is fixed to an end opposed to the spherical contact point of the spindle with having sagging.

10. A bearing structure according to any one of Claims 8 and 9,

wherein the conductive fibers are composed of any one of boron, carbon monofilaments, or tungsten, or a combination thereof.

11. A bearing structure according to any one of Claims 1 to 10,

wherein means for supporting the rotatable components in non-contact state against the fixed components is a hydrodynamic gas bearing.

12. A bearing structure according to Claim 11,

wherein one or more bearing components constituting a radial bearing section and a thrust bearing section of the hydrodynamic gas bearing are made of ceramics.

13. A bearing structure having a hydrodynamic gas bearing, comprising:

fixed components; and

rotatable components which are supported by the fixed components for rotation,

wherein the fixed components and the rotatable components are kept in non-contact state during rotation of the rotatable components, and

wherein among bearing components constituting a radial bearing section and a thrust bearing section of the hydrodynamic gas bearing, at least a pair of bearing components coming into contact with each other when rotation stops is made of conductive ceramics.

14. A bearing structure according to Claim 13, wherein the conductive ceramics is made of Al_2O_3-30vol%TiC, TiB_2, or Si_3N_4-30vol%Tin.

15. A bearing structure having a hydrodynamic gas bearing, comprising:

fixed components; and

rotatable components which are supported by the fixed components for rotation,

wherein the fixed components and the rotatable components are kept in non-contact state during rotation of the rotatable components,

the bearing structure further comprising a conductive structure having a magnetic fluid for electrically connecting the fixed components and the rotatable components either in the region where there is no air flow generated by suction or discharge of a gas for generating hydrodynamic pressure at the hydrodynamic gas bearing potion, or in the region where the air flow is negligible.

16. A spindle motor having the bearing structure according to any one of Claims 1 to 15.

17. A hard disk drive having the spindle motor according to Claim 16.

18. A hard disk drive, comprising:

a plurality of storage media which enable recording or replaying information, or both thereof;

a spindle motor which rotates a plurality of the storage media mounted thereon; and

a plurality of head assemblies each of which access each information storage surface of a plurality of the storage media, and perform recording or replaying information, or both thereof in non-contact state with the rotating information media,

wherein there is provided a discharge induction structure for inducing discharge of electrostatic charge between a dummy disk specified among a plurality of the storage media and a dummy head specified among a plurality of head assemblies.

19. A hard disk drive according to Claim 18,

wherein the discharge induction structure is so structured that a gap between the dummy head and the dummy disk is smaller than a gap between other storage media and other head assemblies accessing thereto during operation in a non-contact state.

20. A hard disk drive according to Claim 19, wherein a gap between the dummy head and the dummy disk is about a half of or less than a half of a gap between other storage media and other head assemblies accessing thereto.

21. A hard disk drive according to Claim 19, wherein a gap between the dummy head and the dummy disk is 15nm or less.

22. A hard disk drive according to Claim 18, wherein the discharge induction structure is so structured that conductivity of the dummy disk is higher than conductivity of other storage media.

23. A hard disk drive according to Claim 18, wherein the discharge induction structure is so structured that conductivity of at least either one of the dummy head or a carriage supporting the dummy head is higher than conductivity of other head assemblies or other carriages, respectively.

24. A hard disk drive according to any one of Claims 18 to 23,

wherein the spindle motor for driving the storage media has a hydrodynamic gas bearing.

25. A hard disk drive according to Claim 24, wherein one or more bearing components constituting a radial bearing section and a thrust bearing section of the hydrodynamic gas bearing are made of ceramics.

26. A method for avoiding damages caused by electrostatic charge in a hard disk drive having a plurality of head assemblies each of which accesses each of the plurality of rotating storage media for performing recording or replaying information, or both thereof between the head assemblies and the storage media,

comprising the step of inducing an electrostatic charge built up in either one of the head assemblies or the storage media to be discharged to the other thereof between a storage medium specified among a plurality of the storage media and a head assembly specified among a plurality of the head assemblies, so as to eliminate damages attributed to discharge of electrostatic charge from other components composing the hard disk drive.